

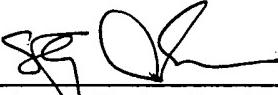
PATENT APPLICATION

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Stephen A. Slusher, Reg. No. 43,924

January 20, 2003  
(Date)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Shubh D. Sharma and Yiqun Shi

Serial No. 09/883,069 : Examiner: T.D. Wessendorf

Filed: June 14, 2001 : Group Art Unit: 1639

For: Metallopeptide Combinatorial  
Libraries and Applications

PROVISIONAL ELECTION WITH TRAVERSE

Box: Non-Fee Amendment  
Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Office Action dated December 19, 2002, the Applicants provisionally elect the claims of Invention I, and respectfully traverses the restriction requirement and requests that it be reconsidered as set forth herein. With respect to species election, Applicants provisionally elects the following species of the claimed invention:

1. Peptide as recited in claim 3.
2. S-thio-butyl as recited in claim 6 (no election is made for species of claim 19 since claim 19 is not within the provisionally elected claims of Invention I).
3. No election is made pursuant to the "S group" as recited in claims 12 or 17; in that neither claims 12 nor 17 are within the provisionally elected claims of Invention I.

4. No election is made pursuant to natural or mimics of amino acid residues or combinations as recited in claim 13; in that claim 13 is not within the provisionally elected claims of Invention I.

5. No election is made pursuant to metal ion as recited in claim 20; in that claim 20 is not within the provisionally elected claims of Invention I.

**Response to Restriction Requirement with Respect to Invention I and Invention IV.** The Examiner asserts the existence of five inventions: Invention I, with claims 1-11 drawn to a combinatorial library of peptides; Invention II, with claims 2, 4-10 and 12 drawn to a combinatorial library of peptidomimetics; Invention III, with claims 3-10 and 12 drawn to a combinatorial library of peptidomimetics in solution; Invention IV, with claims 13 and 15-22 drawn a method for generating a metallopeptide or metallopeptidomimetic **combinatorial library**; and Invention V, with claims 14-21 drawn to a method for producing a metallopeptide or metallopeptidomimetic without solution purification steps.

With respect to Invention IV, Applicants respectfully note that the description at Page 2 of the Office Action is incorrect; as stated above, Invention IV is drawn a method for generating a metallopeptide or metallopeptidomimetic **combinatorial library**, and not to drawn a method for generating a metallopeptide or metallopeptidomimetic per se. See, e.g., preamble of claim 13, step (a) of claim 13 and "wherein" clause of claim 13. As such, Invention IV is related to Invention I as a process for making and the product so made. The Examiner asserts that "in the instant case the product as claimed can be made by another and materially different process as recombinant or by fragment synthesis." Claim 1, as amended by the Preliminary Amendment mailed on January 2, 2002, specifically states that each constituent library member includes

... a peptide sequence of three or more amino acid residues bound to solid phase

characterized by (i) a sequence of two or more amino acid residues forming a metal ion-binding domain and including at least one amino acid residue containing at least one S wherein the said S is protected by an orthogonal S-protecting group, the orthogonal S-protecting group being compatible with peptide solid phase synthesis and removable without cleaving the peptide from the solid phase ...

Similarly, claim 13 as amended specifically provides that in the method a library containing a plurality of sequences of a given formula is constructed, cleavably bound to solid phase, wherein one formula member includes at least one "residue" including "at least one sulfur atom protected by an orthogonal S-protecting group." Thus both the product (combinatorial library) of claim 1 and the method of claim 13 require an "S" or sulfur atom "protected by an orthogonal S-protecting group." Applicants are unaware of any recombinant or fragment synthesis method which would result in the product of claim 1 (i.e., a **library of peptides synthesized on solid phase and bound to solid phase with a metal ion-binding domain including at least one sulfur protected by an orthogonal S-protecting group**). Specifically, neither recombinant means nor fragment synthesis would result in a **library bound to solid phase**. Nor is there any means known to Applicants wherein recombinant means or fragment synthesis would result in a sulfur protected by an orthogonal S-protecting group. Accordingly, Applicants traverse holding that Invention I is patentably distinct from Invention IV. Alternatively, Applicants request that the Examiner further explain the scientific or technical reasons for such restriction.

In the event that the Examiner rejoins Inventions I and IV, Applicants elect such rejoined group. With respect to species, in the event of rejoinder Applicants make the following provisional election:

2. S-thio-butyl as recited in claim 19.
3. The L- or D-3-mercaptop amino acid of Claim 17; no election is made with respect to claim 12 in that claim 12 is not within the claims of Invention IV.
4. With respect to natural or mimics of amino acid residues or combinations as recited in

claim 13, the species amino acid residues is provisionally elected with traverse.

5. With respect to metal ion as recited in claim 20, the species Re (rhenium) is provisionally elected.

**Response to Restriction Requirement with Respect to Inventions I, II and III.** Applicant respectfully traverses this rejection. The only support for the restriction requirement is contained at page 3 of the Office Action, including the assertion that the inventions are "unrelated" and consist of "different compounds or additional, distinct compounds." The difference between the solid phase library of Invention I and the solid phase library of Invention II is that Invention II includes "mimics of amino acid residues" or combinations of such mimics with amino acid residues. Mere assertion of a difference does not establish that the inventions are different within the meaning of MPEP §§ 806.04 and 808.01. The inventions are clearly linked in "design, operation, or effect" in that each involves "a sequence" of three or more elements (either amino acid residues, mimics thereof or a combination) forming a "metal ion-binding domain", wherein one member contains at least one sulfur protected by an orthogonal S-protecting group of identical and specific characteristics, and each further include one or more amino acid residues or mimics thereof at either the N- or C-terminus, with at least one constituent library member has either a unique selection or unique sequence. The general structural formula is identical. The "unique" characteristics of members are identical. The "orthogonal S-protecting group" feature, which Applicants assert is related to patentability, is identical. There is no showing that the inventions are independent. Similarly, with respect to Invention III, the sole difference between this and Inventions I and II is whether the library members are "bound to solid phase" or are "in solution." Again, there is no showing that this difference, where otherwise the matter described is the same, results in an independent invention.

Applicants do not contest that Invention V is subject to restriction.

Applicants further assert that there is no showing that as between Inventions I, II and III, searching all would require or impose any additional search burden. Given particularly the close relationship and indistinct boundary between "amino acid residues" and mimics thereof, it is unlikely that a search could effectively focus on only one without also encompassing the other.

Applicants respectfully request that the restriction requirement be reconsidered and withdrawn, and that all the claims of Inventions I to IV proceed to an examination upon the merits.

Should the Examiner have any comments, questions or suggestions relating to a speedy disposition of the application, she is invited to call the undersigned at (505) 998-6130.

Respectfully submitted,



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Date: January 20, 2003

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